

REMARKS

Claims 1-10, 23-28, 42-64 are pending in the present application. The rejections under 35 U.S.C. 112 and 101 are respectfully traversed. However, in order to further the prosecution of this application, independent claims 1, 7, 8, 49 and 57 have been amended and, when appropriate, Applicants have provided explanations to overcome the rejections. No new matter has been added. Applicants believe that the present application as amended is now in condition for allowance of which prompt and favorable action is respectfully requested.

By this amendment, some claims have been amended to cure informalities noted in the present Office Action. Other claims are amended to preserve consistencies.

Claim Objections

Claim 24 has been amended in accordance with the Examiner's recommendations. Claim 24 now recites "said plurality of summation networks" as suggested by the Examiner.

Claim Rejections under 35 U.S.C. 112

Failing to define the invention

Claims 1-10 and 42-64 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph. Specifically, the Office Action stated that the claims are narrative in form and replete with indefinite and functional or operational language. The MPEP 707.03(d) states that "[t]his paragraph is to be used only where applicant has stated, somewhere other than in the application, as filed, that the invention is something different from what is defined in the claim(s)."

The independent claims 1, 7 and 57 have been amended to overcome this 112 rejection by reciting a method [claim 1], a wireless infrastructure [claim 7] or a base station receiver [claim 57] “for dynamically varying traffic channel sectorization within a spread spectrum communication system.” And, claim 8 recites a wireless infrastructure “to provide dynamic user sectorization by decorrelating signals received from adjacent coverage areas.” The recited preambles of the claims are clearly part of the invention as disclosed in the present application on page 5, lines 16-18, on page 9, lines 11-13 and on page 11, lines 28-33. The pages of the present application mentioned herein connect the claim elements of claims 1, 7, 8, 49 and 57 with performing the end results recited in the preamble of “dynamically varying traffic channel sectorization” or “to provide dynamic user sectorization.”

The preamble of claim 49 has also been amended to overcome the rejection of being “narrative in form, replete with indefinite and functional or operational language.” As amended, claim 49 claims “a computer-readable medium including program code stored thereon.” Although the preamble of claim 49 does not explicitly recite the function of dynamically varying traffic channel sectorization, the recited elements in claim 49, as well as the recited elements in claims 1, 7, 8 and 57 are disclosed in the present application on page 11, line 28, through page 12, line 11.

As shown herein, the independent claims 1, 7, 8, 49 and 57 define the invention as disclosed in the present application, and the 112 rejection of “failing to define the invention” has been overcome by the claim amendments. The rejected dependent claims, based their dependency directly or indirectly on independent claims 1, 7, 8, 49 and 57, are likewise amended to overcome this 112 rejection.

Thus, Applicants believe that the 112, second paragraph, rejection for “failing to define the invention” has been overcome, and withdrawal of this 112 rejection is respectfully requested.

Indefinite

Claims 1-10 and 42-64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicants respectfully traverse this rejection. However, to further the prosecution of this application, independent claims 1, 7, 8, 49 and 57 have been amended to clarify the subject matter being claimed.

As amended, claim 1 is directed to a method for dynamically varying traffic channel sectorization within a spread spectrum communication system.

As amended, claim 7 is directed to a wireless infrastructure for dynamically varying traffic channel sectorization within a spread spectrum communication system.

As amended, claim 8 is directed to a wireless infrastructure to provide dynamic user sectorization by decorrelating signals received from adjacent coverage areas.

As amended, claim 49 is directed to a computer-readable medium including program code.

As amended, claim 57 is directed to a base station receiver for dynamically varying traffic channel sectorization within a spread spectrum communication system.

Applicants maintain that the independent claims 1, 7, 8, 49 and 57 and their respective dependent claims do particularly point out and distinctly claim the subject matter which are clearly stated in the preamble of the claims. Applicants respectfully request the withdrawal of this 112 rejection.

Insufficient Antecedent Basis

Claim 1 is rejected as having insufficient antecedent basis for the limitation “said pair of PN-modulated signals.” Claim 1 has been amended to provide sufficient antecedent basis. Dependent claims of claim 1, based their dependency directly or indirectly on claim 1, are likewise amended to overcome the rejection.

Claim 7 is rejected as having insufficient antecedent basis for the limitation “said pair of PN-modulated signals.” Claim 7 has been amended to provide sufficient antecedent basis. Dependent claims of claim 7, based their dependency directly or indirectly on claim 7, are likewise amended to overcome the rejection.

Claim 49 is rejected as having insufficient antecedent basis for the limitation “said pair of PN-modulated signals.” Claim 49 has been amended to provide sufficient antecedent basis. Dependent claims of claim 49, based their dependency directly or indirectly on claim 49, are likewise amended to overcome the rejection.

Claim 57 is rejected as having insufficient antecedent basis for the limitation “said pair of PN-modulated signals.” Claim 57 has been amended to provide sufficient antecedent basis. Dependent claims of claim 57, based their dependency directly or indirectly on claim 57, are likewise amended to overcome the rejection.

Thus, Applicants respectfully request the withdrawal of the 112 rejections based on “insufficient antecedent basis.”

Omitting Essential Steps

Claims 1-6, 10, 49-54 and 56 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps. In particular, the Office Action stated that the step omitted is “varying the size of a set of user sectors between successive

system operating periods.” Similarly, claims 7, 42-46 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps. In particular, the Office Action stated that the step omitted is “means for varying the size of a set of user sectors between successive system operating periods for introducing a delay between said pair of PN-modulated signals projected to adjacent coverage areas within a given user sector.” Similarly, claims 57-62 and 64 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps. In particular, the Office Action stated that the step omitted is “the at least one antenna varies the size of a set of user sectors between successive system operating periods; and wherein the delay element further introduces a delay between said pair of PN-modulated signals projected to adjacent coverage areas within a given user sector (see claim 63).”

In the rejected claims, claims 1, 7, 49 and 57 are independent claims. The element of “varying the size of a set of user sectors” is an effect or end-result of the elements recited in claims 1, 7, 49 and 57. The other portions of the stated omitted steps, such as “introducing a delay ...” and “the delay element further introduces a delay...”, are already recited in the claims 1, 7, 49 and 57, respectively.

In claim 1, if the steps as recited are performed, the effect is that the size of a set of user sectors will be varied. This is similarly true in claim 49 if the program code instructions are performed. In claims 7 and 57, the operation of the recited structural elements will similarly result in varying the size of a set of user sectors.

Regarding the transmit aspect of the invention, the present application states the end result of “varying user sector size” as such on page 11, lines 28-33, “II. Dynamic Sectorization Using Transmit Antenna Array ... As is described hereinafter, in a

preferred embodiment the present invention contemplates using an arrangement of fixed-beam antennas to dynamically vary the area encompassed by each user sector. As employed herein, the term ‘dynamic user sectorization’ is intended to be descriptive of the process of varying the size of a set of user sectors between successive system operating periods.” *Emphasis added*. This end-result is subsequently related to the process on page 11, line 33, through page 12, line 11. Similarly, regarding the receive aspect of the invention, the present application states the end result of “varying user sector size” as such on page 17, lines 8-10, “III. Dynamic Sectorization within a Receive Network ... Referring to FIG. 6, there is shown a block diagrammatic representation of a base station receiver network 200 configured to provide dynamic user sectorization in accordance with the invention.” *Emphasis added*. This end-result is subsequently related to the claim elements of claims 1, 7, 49 and 57 on page 17, line 16, through page 18, line 21.

Thus, the “omitted step” as suggested in the Office Action is not an omitted step, but rather an end-result of the recited elements in claims 1, 7, 49 and 57 and their respective independent claims. In view of the explanations provided, Applicants respectfully request withdrawal of the 112 rejection regarding “omitting essential steps.”

Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps. In particular, the Office Action stated that the step omitted is “a plurality of receivers operability [*operably, sic*] connected to said plurality of summations networks.” Claim 8 has been amended as suggested by the Examiner to overcome this 112 rejection. Thus, Applicants respectfully request the withdrawal of the 112 rejection of claim 8.

35 U.S.C. 101 Rejection

Claims 1-6, 9, 10 and 49-56 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In the rejected claims, claims 1 and 49 are independent claims. According to the Office Action on page 6, claims 1-6, 9, 10 and 49-56 are rejected “as not falling within one of the four statutory categories of invention.” In particular, the Office Action stated that the claims “claim an abstract idea or calculation to sum two PN modulated signals, that consists solely of the manipulation of abstract ideas that don’t produce any practical application that produces a useful, concrete and tangible result.”

Applicants respectively traverse this rejection. The steps as recited in independent claims 1 and 47 have a practical application, that is, to dynamically vary traffic channel sectorization (i.e., vary the size of a set of user sectors). Explanation of this practical application (i.e., end result) is discussed in the present application on page 11 through page 18 under the sections entitled “II. Dynamic Sectorization Using Transmit Antenna Array” and “III. Dynamic Sectorization within a Receive Network.” The steps of claims 1 and 47 are likewise discussed in association with the application (i.e., end result) of dynamically varying traffic channel sectorization (i.e., vary the size of a set of user sectors) in the cited pages.

For example, “varying user sector size” is discussed on page 11, lines 28-33, and on page 17, lines 8-10. “Introducing a delay” is discussed on page 11, line 33, and on page 17, lines 20-28. “Summing” is discussed on page 13, line 1, and on page 17, line 33. A pair of first and second PN-modulated signals projected to adjacent coverage areas is discussed on page 12, line 1. Receiving signals are discussed on page 17, lines 10-20.

Thus, claims 1 and 47 and their respective dependent claims clearly recite a practical application to satisfy the requirements of 35 U.S.C. 101. Withdrawal of the 35 U.S.C. 101 rejection is respectfully requested.

Allowable Subject Matter

Applicants thank the Examiner for indicating the allowability of claims 23-28.

CONCLUSION

In view of the foregoing, Applicants submit that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited.

Please charge any fees or credit any overpayments that may be due with this response to Deposit Account No. 170026. Applicants encourage the Examiner to telephone the Applicants' attorney should any issues remain.

Respectfully submitted,

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By: /Kenyon S. Jenckes/
Kenyon S. Jenckes, Reg. No. 41,873
858-651-8149

QUALCOMM Incorporated
Attn: Patent Department
5775 Morehouse Drive
San Diego, California 92121-1714
Telephone: (858) 658-2426
Facsimile: (858) 658-2502